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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,500	02/10/2004	Yoon Young Choi	HI-0187	8708

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EXAMINER
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KOSLOW, CAROL M

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/774,500

Applicant(s)

CHOI, YOON YOUNG

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-22 is/are pending in the application.  
4a) Of the above claim(s) 14-22 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 3 and 6-13 is/are rejected.  
7) ☒ Claim(s) 2 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/6/05  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

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This action is in response to applicants' amendment of 28 June 2005. The newly submitted figures and the amendment to the specification have overcome the objection to the drawings. The amendment to the claims have overcome the 35 USC 112 rejection. Upon further consideration, the objection to the specification is withdrawn. Applicant's arguments with respect to the art rejection have been fully considered but they are not persuasive.

EP 418902 and the partial JP Office Action cited in the information disclosure statement filed 6 May 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The remaining references cited in the information disclosure statement filed 6 May 2005 have been considered with respect to the provided English abstracts.

Newly submitted claims 14-22 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The newly added plasma display panel is independent and distinct from the originally claimed phosphor.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14-22 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

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Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim.

The limitation in this claim is already found in claim 1 and is inherent in claim 6 since the only valence state of Ca, Ba, Sr and Zn is +2.

Claims 1 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is indefinite since it lists Ca twice. Claim 1 is indefinite since it includes the inoperative embodiment where  $x+y$  is 0.

Claims 8, 10, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The claimed emission wavelength range and absorption wavelength range are not taught by the specification. Figures 5 and 6 are not detailed enough to support the newly claimed ranges. The compositional ranges of claims 12 and 13 are not taught by the specification. The specification teaches  $\text{Mg}_{0.8}\text{Al}_2\text{O}_4:\text{Eu}_{0.1}^{2+}, \text{Mn}_{0.1}^{2+}$ . This teaching does not support the claims 12 and 13. Thus, the claimed ranges and amounts are new matter.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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Claims 1, 3 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,424,006.

This reference teaches phosphors having the formula  $M_{1-x}Al_2O_4:Eu^{2+}_x$ , where x is 0.00001-0.1 and M can be  $Mg_{1-y}M'_y$  and M' is at least one of Ca, Sr or Ba (col. 2, lines 16-26). The statement in line 27 of column 2 means that the coactivator is not required. Figure 18 shows that y can be in the range of 0.1-0.9. Thus the reference suggests phosphors having the formula  $(Mg_{1-y}M'_y)_{1-x}Al_2O_4:Eu^{2+}_x$ , where M' is at least one of Ca, Sr and Ba, y is 0.01-0.9 and x is 0.00001-0.1. This formula composition falls within and overlaps that claimed and thus the taught formula includes the claimed green phosphors, which inherently have the claimed emission wavelengths and absorption wavelengths, absent any showing to the contrary. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphor.

Applicant argues the reference does not teach the relationship of Mg with Eu and the other taught alkaline earth element. This is incorrect. Example 10 teaches the relationship of Mg and Sr, which the reference teaches is M in the taught formula of  $MAl_2O_4$  and column 2, lines 23-26 teaches the relationship between Eu and M. Thus the reference teaches  $(Mg_{1-y}M'_y)_{1-x}Al_2O_4:Eu^{2+}_x$ , where M' is at least one of Ca, Sr and Ba, y is 0.01-0.9 and x is 0.00001-0.1. This formula can be rewritten as  $Mg_{1-(x+y)}Al_2O_4:Eu^{2+}_xM'^{2+}_y$ . The rejection is maintained.

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Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 2 is allowable for the reasons given in the previous office action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR


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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk  
August 5, 2005



C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700